



**UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
REGION II  
SAM NUNN ATLANTA FEDERAL CENTER  
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ATLANTA, GEORGIA 30303-8931**

October 30, 2000

Southern Nuclear Operating Company, Inc.  
ATTN: Mr. H. L. Sumner, Jr.  
Vice President - Hatch Plant  
Edwin I. Hatch Nuclear Power Plant  
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**SUBJECT: EDWIN I. HATCH NUCLEAR POWER PLANT - NRC INTEGRATED  
INSPECTION REPORT NOS. 50-321/00-04, 50-366/00-04, and 72-36/00-03**

Dear Mr. Sumner:

On September 30, 2000, the NRC completed an inspection at your Hatch Units 1 and 2. The enclosed report documents the inspection findings which were discussed on October 3, 2000, with Mr. P. Wells and other members of your staff.

The inspection examined activities conducted under your license as they relate to safety and compliance with the Commission's rules and regulations and with the conditions of your license. The inspectors reviewed selected procedures and records, observed activities, and interviewed personnel. Based on the results of this inspection, the inspectors identified one issue of very low safety significance (Green). This issue was determined to involve a violation of NRC requirements. However, because of its very low safety significance and because it has been entered into your corrective action program, the NRC is treating the issue as a non-cited violation, in accordance with Section VI.A.1 of the NRC's Enforcement Policy. If you contest this non-cited violation, you should provide a response within 30 days of the date of this letter, with the basis for your denial, to the Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, DC 20555-0001, with copies to the Regional Administrator, Region II; the Director of Enforcement, United States Nuclear Regulatory Commission, Washington, D.C. 20555-0001; and the NRC Resident Inspector at the Hatch facility.

In accordance with 10 CFR 2.790 of the NRC's "Rules of Practice," a copy of this letter and its enclosures will be available electronically for public inspection in the NRC Public Document Room or

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from the Publicly Available Records (PARS) component of the NRC's document system (ADAMS). ADAMS is accessible from the NRC Web site at <http://www.nrc.gov/NRC/ADAMS/index.html> (the Public Electronic Reading Room).

Sincerely,

/RA/

Stephen J. Cahill , Chief  
Reactor Projects Branch 2  
Division of Reactor Projects

Docket Nos.: 50-321,50-366, 72-36  
License Nos.: DPR-57, NPF-5

Enclosure: 50-321/00-04, 50-366/00-04  
and 72-36/00-03

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U. S. NUCLEAR REGULATORY COMMISSION

REGION II

Docket Nos: 50-321, 50-366, 72-36

License Nos: DPR-57, NPF-5

Report No: 50-321/00-04, 50-366/00-04, 72-36/00-03

Licensee: Southern Nuclear Operating Company, Inc. (SNC)

Facility: E. I. Hatch Nuclear Power Plant, Units 1 & 2

Location: P. O. Box 2010  
Baxley, Georgia 31515

Dates: July 2 - September 30, 2000

Inspectors: J. Munday, Senior Resident Inspector  
J. Starefos, Acting Senior Resident Inspector  
T. Fredette, Resident Inspector  
K. O'Donohue, Resident Inspector, Vogtle  
C. Rapp, Senior Project Engineer, RII, (Section 1R01 and 1R06)  
M. Sykes, RII, Licensing Examiner, (Section 1R11)  
W. Bearden, Reactor Engineer, RII, (Section 1R12)  
W. Sartor, Emergency Preparedness Inspector, (Sections 1EP2-5 and  
4OA.1-.3)  
D. Forbes, Radiation Specialist, RII, (Sections 2OS1, 2, 4, 2PS1, and  
2PS3)  
L. Hayes, Physical Security Inspector, RII,  
(Section 3PP1)

Approved by: Stephen J. Cahill, Chief  
Reactor Projects Branch 2  
Division of Reactor Projects

## SUMMARY OF FINDINGS

IR 05000321-00-04, IR 05000366-00-04, IR 072000036-00-03, on 07/02-09/30/2000; Southern Nuclear Operating Company, Inc., Edwin I. Hatch Nuclear Power Plant, Units 1 & 2. Access control to significant radiological areas.

The inspection was conducted by resident inspectors, a regional radiation specialist, a regional projects inspector, a regional maintenance inspector, a regional emergency preparedness inspector, a regional physical security inspector, and a regional licensing examiner. The inspection identified one Green finding, which was a non-cited violation. The significance of findings are indicated by their color (Green, White, Yellow, Red) using the Significance Determination Process (SDP) found in NRC Inspection Manual Chapter (IMC) 0609.

### **Cornerstone: Occupational Radiation Safety**

- Green. Licensee personnel failed to follow procedures for reading dosimetry while in work areas and health physics staff failed to implement radiation protection controls by not performing adequate surveys to evaluate the magnitude and extent of radiation levels as required by 10 CFR Part 20.1501(a)(2). This resulted in a worker receiving an unintended exposure in excess of 100 millirem in the Unit 1 Reactor Water Cleanup valve nest area. The failure to implement the required radiation protection controls described in site procedures for controlling work was identified as a non-cited violation.

The risk significance of this violation was evaluated as having very low safety significance using the Occupational Radiation Safety Significance Determination Process. The violation was not significant because there was no substantial potential for overexposure. The high levels of radiation necessary to cause an overexposure did not exist and would likely have been detected by the surveys that were performed based on the dose rates in the area and the duration of the work performed (Section 2OS1).

## Report Details

### Summary of Plant Status

Unit 1 operated at or near rated thermal (RTP) power until July 10, when the reactor automatically scrammed due to a failed turbine vibration instrument. A power coastdown commenced September 7 for a planned refueling outage. On September 29, the reactor was manually scrammed from 55 percent RPT when the operating reactor feed pump (RFP) tripped. The licensee began the refueling outage following this unit scram.

Unit 2 operated at or near RTP for the duration of the inspection period.

### 1. **REACTOR SAFETY** **Cornerstones: Initiating Events, Mitigating Systems, Barrier Integrity**

#### 1R01 Adverse Weather Protection

##### a. Inspection Scope

The inspectors conducted a walkdown inspection of the flow switches for detection and automatic isolation of Plant Service Water (PSW) line breaks to the Emergency Diesel Generators (EDGs) and to the turbine building. The inspectors used Procedure 52PM-MEL-005-0S, Freeze Protection, Revision (Rev.) 9 as criteria for the freeze protection requirements in these areas.

##### b. Issues and Findings

No findings were identified.

#### 1R04 Equipment Alignments

##### a. Inspection Scope

For the systems below, inspectors reviewed plant documents and examined portions of the equipment to verify that the system was correctly aligned:

- Unit 1 Residual Heat Removal (RHR)
- Unit 1 Reactor Core Isolation Cooling (RCIC)
- Unit 1 EDGs A and C
- Unit 2 DC Electrical Distribution System

A detailed equipment alignment inspection was performed on the Unit 2 DC Electrical Distribution System. The inspectors reviewed selected documents, plant procedures, drawings, and the Updated Final Safety Analysis Report (UFSAR). The inspectors performed a walkdown to identify any discrepancies between the existing system equipment lineup and the requirements specified in the reviewed documents. In addition, the inspectors reviewed outstanding maintenance work orders (MWOs) on the system and related condition reports (CRs) initiated over the previous 18 month period to verify that the licensee had properly identified and resolved equipment alignment problems that could cause initiating events or impact mitigating system availability.

b. Issues and Findings

No findings were identified.

1R05 Fire Protection

a. Inspection Scope

Inspectors toured the following plant fire zones described by the licensee's Pre-Fire Plan drawings. A sample of the equipment was verified to be in the expected location. Licensee control of transient combustibles and ignition sources was also considered while performing this inspection.

- Fire Zone 0024A, Cable Spreading Room
- Fire Zone 0024B, Computer Room
- Fire Zones 2408, 2409, Switchgear Rooms 2F and 2G
- Fire Zones 2203F, 2205F, North and South Control Rod Drive Area
- Fire Zones 0040, 1013, 2013, RPS and Cable Tray Rooms
- Fire Zones 2009, 2010 RPS Battery Rooms 2A and 2B

On September 15, the licensee recognized that generic industry concerns about the adequacy of Kaowool fire barriers were applicable to Hatch Kaowool at the river intake structure. The licensee initiated fire actions 1-00-124 and 2-00-115 to implement an hourly fire watch. Fire action document 2-00-115 stated that, even though the Kaowool is still considered operable, a conservative action of an hourly fire watch will be established until the issue is resolved. In a July 12, 1993, letter from Georgia Power Company (GPC) to the NRC, Response to a Request for Additional Information - Thermal Ceramic FP-60 Fire Barrier, the licensee stated that GPC has concluded that the FP-60 firemaster barrier meets the current licensing basis for the Appendix R Application, divisional separation applications, and applications for the reduction of combustible loadings.

These fire barriers were previously credited in two exemptions from 10 CFR 50 Appendix R requirements. Recent reviews of Kaowool fire barriers installed at other nuclear power plants determined that the Kaowool qualification testing may not be bounding for all configurations. The inspectors verified the actions taken to implement the fire watch.

b. Issues and Findings

Further NRC review is required to evaluate the licensee's conclusion that the FP-60 firemaster barrier meets the current licensing basis for its use in the river intake structure. An Unresolved Item (URI) was initiated to ensure that the NRC reviewed the licensee's conclusion. This issue is identified as URI 50-321, 50-366/00-04-01, Kaowool Fire Protection Barrier at Intake Structure. No other findings were identified.

1R06 Flood Protection Measures

a. Inspection Scope

The inspectors conducted a walkdown inspection of plant areas to verify the adequacy of licensee procedures and controls associated with internal flooding. The areas included Unit 1 and Unit 2 Torus rooms, Unit 1 and Unit 2 RHR corner rooms, RHRSW Intake Structure, and PSW valve pits. The inspectors reviewed plant design features to mitigate internal and external flooding as described in the UFSAR, Chapter 4, Site Characteristics, and Chapter 15, Accident Analysis. The inspectors also reviewed Annunciator Response Procedures that would provide guidance for mitigation of internal flooding.

b. Issues and Findings

No findings were identified.

1R07 Heat Sink Performance

a. Inspection Scope

The inspectors observed activities for inspection, cleaning, and leak detection of the 1B RHR Heat Exchanger. These included a walkdown of the inspection setup, observation of eddy current testing, and observation of special testing for tube leak detection. The eddy current test results were compared to the previous test report (Fall 1997). The inspectors also reviewed the documentation of the as-found condition data.

b. Issues and Findings

No findings were identified.

1R11 Licensed Operator Requalification Program

a. Inspection Scope

The inspectors completed the quarterly and annual inspection of the licensed operator requalification program. Inspectors observed the annual dynamic simulator examinations for one shift of operators during requalification segment 00-06 to evaluate the adequacy of licensee training on high risk operator actions. During these observations, the inspectors assessed licensee evaluator effectiveness in identifying operator performance deficiencies requiring supplemental training. The inspectors also evaluated the walkthrough portion of the annual requalification examination to evaluate the scope of coverage. Examination quality, licensee effectiveness in incorporating plant and industry feedback into the training program, and examination development methodology were evaluated for compliance with licensee procedures 72TR-TRN-002-OS, "License Requalification Training Program Training Procedure" and 74TR-TRN-001-OS, "Training Program Development, Revision and Administration."

The inspectors reviewed a sample of training attendance records for the previous requalification cycle and on-shift licensed operator qualification records to ensure



compliance with 10 CFR 55.59, Requalification, and 10 CFR 55.53, Conditions of License.

b. Issues and Findings

No findings were identified.

1R12 Maintenance Rule (MR) Implementation

.1 Routine MR Assessment

a. Inspection Scope

For the equipment issues described below, the inspectors reviewed the licensee's implementation of the MR (10 CFR 50.65) with respect to the characterization of specific equipment problems. For the specified examples, the associated a(1) or a(2) system classification and the appropriateness of the associated a(2) performance criteria were verified. The inspectors determined that associated a(1) goals were established, if required, and that corrective actions for a(1) functions were planned or being implemented to address problems, as appropriate.

- Unit 1 High Pressure Coolant Injection (HPCI) Turbine Stop Valve Failure - August 2000
- 1A Condensate Booster Pump in Pull to Lock / Mechanical Seal Leak - August 2000
- RHRSW Degraded Flow Conditions

b. Issues and Findings

No findings were identified.

.2 Review of MR Periodic Assessment

a. Inspection Scope

The inspector reviewed the licensee's second MR periodic assessment, "Maintenance Rule (a)(3) Periodic Assessment" dated July 10, 2000. The assessment report was issued to satisfy paragraph a(3) of (10 CFR 50.65) and covered the period of March 1998 to March 2000. The inspector verified that the assessment was issued in accordance with the time requirements of the MR and included evaluation of: balancing reliability and unavailability; MR a(1) and a(2) activities; and use of industry operating experience. To verify compliance with 10 CFR 50.65, the inspector reviewed selected MR activities covered by the assessment period from the following risk significant systems: HPCI, EDG, PSW, and RCIC. Additionally, the inspector reviewed licensee actions associated with corrective actions and reclassification of four systems previously classified as MR a(1). The procedures and documents reviewed during this inspection are listed in Attachment 2 of this report.

b. Issues and Findings

No findings were identified.

#### 1R13 Maintenance Risk Assessments and Emergent Work Evaluation

##### a. Inspection Scope

The inspectors evaluated the effectiveness of the risk assessments for the following planned or emergent maintenance activities. In some cases, formal written evaluations were reviewed; in other cases, discussions with operators, inspector observations, or independent inspector review was used to determine that adequate control was maintained. Licensee performance was evaluated against regulatory requirements and site procedures.

- 2B Station Service Air Compressor Preventive Maintenance
- Unit 1 Traveling Water Screen Removed from Service
- Unit 2 RHR/Core Spray Inleakage Determination
- Unit 2 Div II PSW Header Pressure Indicator Removed from Service
- Unit 1 4160V Busses A and B Transferred to Alternate Supply
- Unit 1 Condensate/Feedwater Pump Removal from Service

##### b. Issues and Findings

No findings were identified.

#### 1R14 Personnel Performance During Nonroutine Plant Evolutions

##### a. Inspection Scope

On July 13, the inspectors observed portions of the Unit 1 startup following a reactor scram on July 10. Activities were compared to site procedures and regulatory requirements.

On September 29, the inspectors observed the performance of the Unit 1 operating crew following a manual reactor scram that was initiated in response to a loss of feedwater when the in-service reactor feedwater pump tripped on low suction pressure. The inspectors observed licensee performance of command and control, communications, procedure usage, coordination of activities, and supervisory oversight. Observations were compared to site procedures and directives and regulatory requirements. The inspectors verified that containment group isolations and associated engineered safety features actuated as designed and that the licensee made the appropriate notifications required by 10 CFR 50.72.

##### b. Issues and Findings

No findings were identified.

#### 1R15 Operability Evaluations

##### a. Inspection Scope

The inspectors assessed the technical adequacy of operability evaluations which addressed the following system and component issues, to ensure that operability was properly justified and the subject system or component remained available, such that no unrecognized increase in risk occurred. The assessments were evaluated against regulatory requirements.

- Unit 1 HPCI Pump Minimum Flow Valve 1E41-F012
- Pressurization of Unit 2A Loops of the RHR and Core Spray Systems
- Unit 1 Evaluations of Scaffolding Location Close to HPCI system and valves
- RHR and Primary Containment Operability
- Unit 2 Drywell Temperature Instrument Variance

b. Issues and Findings

No findings were identified.

1R16 Operator Workarounds

a. Inspection Scope

The inspectors reviewed licensee procedures and controls; overall affect on system operation; and operator performance for an operator work around for the RHR Inboard Injection Valve, 2E11-F015A. The valve is leaking-by and causing the RHR system to pressurize. The inspectors considered the effect of the routine depressurization that may be required if the continuous depressurization path was isolated during an event.

b. Issues and Findings

No findings were identified.

1R19 Post Maintenance Testing

a. Inspection Scope

For the post-maintenance tests listed below, the inspectors evaluated the testing to determine whether the scope of testing adequately verified that the work performed was correctly completed and demonstrated that the affected equipment was functional and operable. Inspectors reviewed the test procedure, witnessed the testing, or reviewed test records.

- Unit 1 Installation of turbine supervisory control alarm card temporary modification
- Unit 2 EDG 2C Temperature Monitoring System post-calibration testing
- Unit 1 4160-volt bus transfer logic and timing, post-repair testing
- Unit 1 Intermediate Range Neutron Monitoring System (IRM) post-calibration testing
- Unit 1 HPCI turbine stop valve, post-repair testing
- Units 1&2 EDG B auxiliary switchgear alternate supply breaker PM and repair
- Unit 2 RPS 2A 600v feeder breaker repair

b. Issues and Findings

No findings were identified.

1R22 Surveillance Testinga. Inspection Scope

For the surveillance testing sample listed below, the inspectors determined that the scope of testing adequately demonstrated that the affected equipment was functional and operable. The inspectors reviewed the test procedure, witnessed the testing, or reviewed test records. The testing was evaluated against the TS acceptance criteria and regulatory requirements

- 34SV-R43-004-1S, EDG 1A Semi-Annual Test, Rev. 12
- 34GO-OPS-001-1S, Plant Startup, Rev. 28
- 42SV-TET-001-1S, Leak Rate Test of Unit 1 Drywell Access, Rev. 18
- 34SV-E11-002-1S, 1C RHRSW Pump Operability, Rev. 17
- 34SV-E41-002-2S, HPCI Pump Operability, Rev. 28
- 64CH-SAM-025-0S, Reactor Coolant Sampling and Analysis, Rev. 3
- 34SV-C41-002-2S, Standby Liquid Control Pump Operability Test, Rev. 18

b. Issues and Findings

No findings were identified.

1R23 Temporary Plant Modifications (TM)a. Inspection Scope

The inspectors verified that the following TMs either did not affect the safety functions of important systems or were not implemented if the safety function was affected. Licensee documentation was reviewed to support this determination and discussions with licensee personnel supplemented the review.

- TM 1-00-013, Replacement of Unit 1 Main Turbine Supervisory Control Dual Alarm
- Installation of Data Acquisition Equipment on 1A and 2A EDG
- TM 2-00-22, Throttling of the 2A RHR Heat Exchanger Vent Valves

b. Issues and Findings

No findings were identified.

**Cornerstone: Emergency Preparedness**

1EP2 Alert and Notification System Testinga. Inspection Scope

The inspector evaluated the alert and notification system (ANS) design and the testing program. The system testing program was compared to the design standards and site procedures.

b. Issues and Findings

No findings were identified.

1EP3 Emergency Response Organization Augmentation Testing

a. Inspection Scope

The inspector reviewed the design of the emergency response organization augmentation system and the licensee's capability to staff emergency response facilities within site procedure timeliness goals. The licensee was currently augmenting its emergency call list procedure with the assignment of Satellink pagers to designated responders to improve response time.

b. Issues and Findings

No findings were identified.

1EP4 Emergency Action Level and Emergency Plan Changes

a. Inspection Scope

The inspector reviewed changes to the Emergency Plan and the emergency action levels (EALs) to determine whether any of the changes decreased the effectiveness of the Emergency Plan. The current Emergency Plan was Rev. 16, dated May 2000. The review was performed against the requirements of 10 CFR 50.54 (q).

b. Issues and Findings

No findings were identified.

## 1EP5 Correction of Emergency Preparedness Weaknesses and Deficiencies

### a. Inspection Scope

The inspector evaluated the efficiency of licensee programs that addressed weaknesses and deficiencies in emergency preparedness. Items reviewed included exercise and drill critique reports and the licensee's Nuclear Plant Management Information System Action Item Tracking Detail Report.

### b. Issues and Findings

No findings were identified.

## 2. **RADIATION SAFETY** **Cornerstone: Occupational Radiation Safety**

## 2OS1 Access Control to Radiological Significant Areas

### a. Inspection Scope

The licensee informed inspectors that an event in a locked high radiation area had resulted in an individual receiving greater than 100 millirem of unintended exposure. The licensee identified that this event potentially met the criteria for inclusion as an NRC Performance Indicator (PI) issue. The inspectors reviewed licensee procedure 62RP-RAD-016-OS, "Very High And High Radiation Area Access Control," Rev. 13 to determine licensee requirements for working in high radiation areas and to determine if the requirements of 10 CFR 20.1501 were being implemented.

### b. Issues and Findings

On August 23, three mechanics and a health physics technician entered the Unit One Reactor Water Cleanup valve nest room, a posted locked high radiation area, to install three relief valves. The mechanics and the health physics technician wore Digital Alarming Dosimeters (DADs) and thermoluminescent dosimetry (TLDs). During the work evolution one mechanic entered a dose rate area of approximately 800 millirem per hour that had not been previously surveyed or identified.

Licensee procedure 62RP-RAD-016-OS, "Very High And High Radiation Area Access Control," Rev. 13, paragraph 4.1.2 stated, "HP will perform and document radiological surveys and air samples as necessary to establish protective measures required for entry by plant personnel." Paragraph 4.1.8 of this procedure stated, "Personnel entering Very High and High Radiation Areas MUST be aware of the radiological conditions in the work area and follow good radiological work practices to maintain their exposures As Low As Reasonably Achievable (ALARA)."

The licensee investigation determined that one worker's DAD went into the alarm mode when 100 millirem was received as a result of moving to the higher dose rate area. Due to high background noise in the area, the alarm was not detected until the workers were exiting the work area. Also, alarming dosimeters were being worn under protective

clothing which prevented the workers from seeing the flashing light on the DAD to alert them that an administrative limit had been exceeded. The workers were not reading their dosimeters periodically because they did not want to risk contaminating themselves while retrieving the dosimeters. Licensee procedure 60AC-HPX-002-OS, "Personnel Dosimetry Program", Rev. 16 stated, "While in High Radiation areas, personnel will examine monitoring devices periodically to keep individuals informed of their dose and the dose rate."

Upon exiting the work area, the licensee performed tests on the DAD that alarmed and determined it was functioning properly. The licensee had the worker's TLD processed and added 31 more millirem to the TLD reading to obtain a maximum dose received based on worker location in relation to the dosimetry placement on the body. The worker's total dose for the entry was calculated to be 406 millirem which exceeded the Radiation Work Permit limit of 100 millirem and the DAD setting alarm limit of 100 millirem.

Licensee personnel failed to follow procedures for reading dosimetry while in work areas and health physics staff failed to implement radiation protection controls by not performing adequate surveys to evaluate the magnitude and extent of radiation levels as required by 10 CFR Part 20.1501(a)(2). The licensee documented this event in corrective action document CO-0007230.

The risk significance of this violation was evaluated using the Occupational Radiation Safety Significance Determination Process and determined to be Green. The violation was not more significant because there was no substantial potential for overexposure. The high levels of radiation necessary to cause an overexposure did not exist and would likely have been detected by the surveys that were performed based on the dose rates in the area and the duration of the work performed.

Failure to perform adequate surveys was a violation of 10 CFR Part 20.1501(a)(2) which requires that each licensee make or cause to be made surveys that are reasonable under the circumstances to evaluate radiological conditions, and is being treated as a non-cited violation (50-321/00-04-02: Inadequate Radiation Survey) in accordance with Section VI.A.1 of the NRC Enforcement Policy. [GREEN]

## 2OS2 As Low As Reasonably Achievable (ALARA) Planning and Controls

### .1 Collective Exposure and Dose Goals

#### a. Inspection Scope

The inspectors reviewed the plant collective exposure history, current exposure dose trends, and the year 2000 annual site dose goal to determine if the licensee was implementing ALARA practices as required by 10 CFR 20.1101(b) and licensee procedure 60AC-HPX-009-OS, Rev. 13, "ALARA Program." The inspectors also reviewed dose controls for pregnant females, source term reduction efforts, the incorporation of ALARA into licensee Radiation Work Permits, and ALARA job evaluations for five dose significant jobs to include: ALARA planning, goals and estimates, and problem identification.

b. Issues and Findings

No findings were identified.

.2 Site Dose Goals and Forced Outage Performance

a. Inspection Scope

The inspectors reviewed the plant collective exposure history, current exposure dose trends, and the year 2000 annual site dose goal to determine if the licensee was implementing ALARA practices as required by 10 CFR 20.1101(b) and licensee procedure 60AC-HPX-009-0S, Rev. 13, "ALARA Program." The inspectors reviewed licensee Radiation Work Permits and discussed internal and external exposure goals and practices with health physics personnel for a Unit 1 forced outage that occurred during the onsite inspection to also verify 10 CFR 20.1101 requirements.

b. Issues and Findings

No findings were identified.

2OS4 Operation of an Independent Spent Fuel Storage Facility Installation (ISFSI)

- a. The inspectors attended a Plant ALARA Review Committee meeting which addressed methods for reducing worker exposures during ISFSI operations to determine if the ALARA committee meeting followed the requirements of licensee procedure 60AC-HPX-009-05, Rev. 13, "ALARA Program." The inspectors attended a meeting with health physics management, technicians, and ALARA personnel to review ISFSI operations. The inspectors performed independent radiation surveys of the ISFSI cask storage area to verify radiation levels met the requirements of 10 CFR 72.106 and to verify ISFSI cask survey results documented on licensee survey forms HPX-002, Rev. 1, were accurate.

b. Issues and Findings

No findings were identified.

**Cornerstone: Public Radiation Safety [PS]**

2PS1 Gaseous and Liquid Effluent

a. Inspection Scope

The inspectors reviewed the 1999 Radiological Effluent Release Report submitted to the NRC to verify the effluent monitoring program was implemented in accordance as required by TS and the Offsite Dose Calculation Manual (ODCM) to maintain exposures to the public below regulatory limits. Calibrations for environmental pathway radiation monitors required by the ODCM were also reviewed. Licensee procedures reviewed to verify monitor calibration data and unplanned release pathways are listed in Attachment 2 of this report.



b. Issues and Findings

No findings were identified.

2PS3 Radiological Environmental Monitoring

a. Inspection Scope

The inspectors reviewed the licensee's 1999 Environmental Monitoring Report submitted to the NRC to verify the Radiological Environmental Monitoring Program was implemented as required by TS and the ODCM. The inspectors also verified the location of approximately 10 percent of the Thermoluminescence monitoring stations and verified operation of environmental sampling equipment for air required by the ODCM. Interlaboratory comparison results for environmental sampling were reviewed as well as audits and corrective actions for the laboratory performing environmental analyses as required by licensee procedure 64CH-QC-001-OS, Quality Control For Laboratory Analysis. The inspectors also verified licensee laboratory gamma counting equipment was being calibrated in accordance with licensee procedure 64CI-OCB-018-OS, Canberra Microvax Gamma Spectrometer Calibrations. Procedures and documents reviewed during this inspection are listed in Attachment 2 of this report.

b. Issues and Findings

No findings were identified.

**Cornerstone: Physical Protection**

3PP1. Access Authorization

a. Inspection Scope:

During an in-office review, the inspector evaluated the licensee's process for reporting and closing behavioral observations. Licensee Corporate Guideline 720-001, "Fitness for Duty"; 720-036, "Mandatory Fitness for Duty Evaluations"; and 10 AC-MGR-014-OS, "Fitness for Duty Program", were evaluated to determine if the licensee had an effective Behavioral Observation Program in place.

b. Issues and Findings

On February 8, a supervisor observed an employee behaving in what the supervisor considered an aberrant manner. The employee was denied site access until the results of a mandatory fitness for duty evaluation were obtained. The employee completed the evaluation but could not return to work until the results were obtained. The Employee Assistance Program (EAP) professional, who had evaluated the individual, concluded the individual was fit for duty, pending other physical medical restrictions. The SNC Medical Director agreed with the EAP professional's conclusion. However, as required by Corporate Guidelines 720-001 and 720-036, a meeting was not scheduled between the individual and the Medical Review Officer (MRO) to communicate the recommendations or determine the employee's intentions with regard to returning to work. Additionally, both guidelines require an official communication if an employee is returned to work. This communication would describe the reason for mandatory FFD

referral; specify any work restrictions or schedule adjustments; and contain a conclusion about the employee's overall fitness for duty.

The inspector determined that the official communication required by both Corporate Guidelines had not been completed. Because the requirements were not followed, the employee was not officially informed that site access had been restored.

The requirements of 10 CFR 26 specify that written policy and procedures designed to meet the general objective of this part shall be established and implemented. The licensee's failure to schedule a meeting between the MRO and the individual and the failure to prepare official communication as required in Corporate Guidelines 720-001 and 720-036, constitutes a violation of minor significance and is not subject to formal enforcement action in accordance with Section IV of the NRC Enforcement Policy.

#### .4 **OTHER ACTIVITIES**

##### 4OA1 Performance Indicator (PI) Verification

#### **Emergency Preparedness Cornerstone**

##### .1 Emergency Response Organization (ERO) Drill/Exercise Performance

###### a. Inspection Scope

The inspector assessed the accuracy of the PI for ERO drill and exercise performance (DEP) through review of documentation. In addition, the inspectors reviewed and discussed the licensee's methodology for calculating the DEP PI. The inspector verified the licensee's reporting that 98.89% of drill and exercise opportunities to classify, notify and develop protective action recommendations were performed timely and accurately for the previous eight quarters ending June 2000.

###### b. Issues and Findings

No findings were identified.

##### .2 ERO Drill Participation

###### a. Inspection Scope

The inspector assessed the accuracy of the PI for ERO drill participation through review of source records for selected individuals. Records reviewed included the Emergency Response Position Matrix dated June 30, 2000 and selected records from the Plant Training Records and Qualification System. The inspector verified the licensee's reporting that 89.43% of key ERO members participated in a drill, exercise or actual event for the previous eight quarters ending June 2000.

###### b. Issues and Findings

No findings were identified.

##### .3 Alert and Notification System Reliability

a. Inspection Scope

The licensee reports this PI as Not Applicable due to their unique design of supplying tone alert radios to personnel within the EPZ instead of using alert and notification sirens. The inspector reviewed how the licensee worked with the electrical utility personnel to determine when personnel moved into the EPZ and needed a tone alert radio. The inspector determined that the distribution and maintenance of the tone alert radios as the means for notification to the public in the EPZ was meeting licensee commitments.

b. Issues and Findings

No findings were identified.

**Containment Barrier Cornerstone**.4 PI Verification-Reactor Coolant System (RCS)a. Inspection Scope

The inspectors reviewed the laboratory data and monthly PI summary reports for April, May, and June 2000; and observed activities for RCS sample collection and analysis, specifically for Dose Equivalent Iodine concentration. The performance indicator accuracy and completeness were verified.

b. Issues and Findings

No findings were identified.

.5 PI Verification- RCS Leak Ratea. Inspection Scope

The inspectors reviewed RCS leak rate calculation input, interviewed operations personnel, and reviewed PI Summary reports for April, May, and June 2000. The performance indicator accuracy and completeness were verified.

b. Issues and Findings

No findings were identified.

4OA3 Event Follow-up

a. Inspection Scope

The inspectors observed equipment and operator response to a Unit 1 scram from 100 percent power on July 10. A failed vibration instrument on a main turbine bearing caused a false high vibration trip signal to the turbine. The inspectors verified that the systems necessary to mitigate the event operated as designed. The 1B non-safety related 4160-volt bus failed to automatically transfer to its startup source following the trip, but this did not introduce any safety issues or major complications during the event or recovery. The licensee concluded that the failure of the bus to transfer was due to slower than nominal opening time of the normal supply breaker, which affected the overall timing of the bus transfer. Operator performance was observed to determine that the actions directed by site procedures were properly followed. The inspectors verified that the licensee reported the event to the NRC in accordance with the applicable regulations.

b. Issues and Findings

No findings were identified.

4OA6 Management Meetings

.1 Exit Meeting Summary

The inspectors presented the inspection results to Mr. P. Wells, Plant Manager, and other members of licensee management at the conclusion of the inspection on October 3. The licensee acknowledged the findings presented. The inspectors asked the licensee whether any other material examined during the inspection should be considered proprietary. No proprietary information was identified.

.2 Public Meetings

The NRC conducted a Revised Reactor Oversight Program Meeting at the Southeastern Technical Institute's Tattnell Auditorium in Vidalia, Georgia, on August 23, to discuss the NRC's revised program for inspection and enforcement of nuclear plants with members of the public.

**PARTIAL LIST OF PERSONS CONTACTED**Licensee

Betsill, J., Assistant General Manager - Plant Support  
Curtis, S., Unit Superintendent  
Davis, D., Plant Administration Manager  
Dedrickson, R., Operations Manager  
Googe, M., Performance Team Manager  
Hammonds, J., Engineering Support Manager  
Johnson, G., Safety Audit and Engineering Review Supervisor  
Kirkley, W., Health Physics and Chemistry Manager  
Lewis, J., Training and Emergency Preparedness Manager  
Madison, D., Assistant General Manager - Operations  
Moore, C., General Manager Nuclear Support, Birmingham  
Reddick, R., Site Emergency Preparedness Coordinator  
Roberts, P., Outage and Planning Manager  
Thompson, J., Nuclear Security Manager  
Tipps, S., Nuclear Safety and Compliance Manager  
Varnadore, R., Operations Support Superintendent  
Wells, P., General Manager - Nuclear Plant

Other licensee employees contacted included office, operations, engineering, maintenance, chemistry/radiation, and corporate personnel.

NRC

S. Cahill, Chief, Reactor Projects Branch 2  
L. Olshan, Hatch Project Manager, NRR

**ITEMS OPENED, CLOSED, AND DISCUSSED**Opened

321,366/00-004-01	URI	Kaowool Fire Protection Barrier at Intake Structure (Section 1R05)
321/00-004-02	NCV	Inadequate Radiation Survey (Section 2OS1)

Closed

321/00-004-02	NCV	Inadequate Radiation Survey (Section 2OS1)
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Attachment 1. NRC's Revised Reactor Oversight Process Summary  
Attachment 2. Procedures and Documents Reviewed

## NRCs REVISED REACTOR OVERSIGHT PROCESS

The federal Nuclear Regulatory Commission (NRC) revamped its inspection, assessment, and enforcement programs for commercial nuclear power plants. The new process takes into account improvements in the performance of the nuclear industry over the past 25 years and improved approaches of inspecting safety performance at NRC licensed plants.

The new process monitors licensee performance in three broad areas (called strategic performance areas): reactor safety (avoiding accidents and reducing the consequences of accidents if they occur), radiation safety (protecting plant employees and the public during routine operations), and safeguards (protecting the plant against sabotage or other security threats). The process focuses on licensee performance within each of seven cornerstones of safety in the three areas:

### Reactor Safety

- Initiating Events
- Mitigating Systems
- Barrier Integrity
- Emergency Preparedness

### Radiation Safety

- Occupational
- Public

### Safeguards

- Physical Protection

To monitor these seven cornerstones of safety, the NRC uses two processes that generate information about the safety significance of plant operations: inspections and performance indicators. Inspection findings will be evaluated according to their potential significance for safety, using the Significance Determination Process, and assigned colors of GREEN, WHITE, YELLOW or RED. GREEN findings are indicative of issues that, while they may not be desirable, represent little effect on safety. WHITE findings indicate issues with some increased importance to safety, which may require additional NRC inspections. YELLOW findings are more serious issues with an even higher potential to effect safety and would require the NRC to take additional actions. RED findings represent an unacceptable loss of safety margin and would result in the NRC taking significant actions that could include ordering the plant shut down.

Performance indicator data will be compared to established criteria for measuring licensee performance in terms of potential safety. Based on prescribed thresholds, the indicators will be classified by color representing incremental degradation in safety: GREEN, WHITE, YELLOW, and RED. The color for an indicator corresponds to levels of performance that may result in increased NRC oversight (WHITE), performance that results in definitive, required action by the NRC (YELLOW), and performance that is unacceptable but still provides adequate protection to public health and safety (RED). GREEN indicators represent performance at a level requiring no additional NRC oversight beyond the baseline inspections.

The assessment process integrates performance indicators and inspection so the agency can reach objective conclusions regarding overall plant performance. The agency will use an Action Matrix to determine in a systematic, predictable manner which regulatory actions should be taken based on a licensee's performance. As a licensee's safety performance degrades, the NRC will take more and increasingly significant action, as described in the matrix. The NRC's actions in response to the significance (as represented by the color) of issues will be the same for performance indicators as for inspection findings.

More information can be found at: <http://www.nrc.gov/NRR/OVERSIGHT/index.html>.

Maintenance Rule 16.00 - 16.05, 16.06, 16.07, 16.08, 16.09, 16.10, 16.11, 16.12, 16.13, 16.14, 16.15, 16.16, 16.17, 16.18, 16.19, 16.20, 16.21, 16.22, 16.23, 16.24, 16.25, 16.26, 16.27, 16.28, 16.29, 16.30, 16.31, 16.32, 16.33, 16.34, 16.35, 16.36, 16.37, 16.38, 16.39, 16.40, 16.41, 16.42, 16.43, 16.44, 16.45, 16.46, 16.47, 16.48, 16.49, 16.50, 16.51, 16.52, 16.53, 16.54, 16.55, 16.56, 16.57, 16.58, 16.59, 16.60, 16.61, 16.62, 16.63, 16.64, 16.65, 16.66, 16.67, 16.68, 16.69, 16.70, 16.71, 16.72, 16.73, 16.74, 16.75, 16.76, 16.77, 16.78, 16.79, 16.80, 16.81, 16.82, 16.83, 16.84, 16.85, 16.86, 16.87, 16.88, 16.89, 16.90, 16.91, 16.92, 16.93, 16.94, 16.95, 16.96, 16.97, 16.98, 16.99, 17.00

July 2000, Appendix B, HRSG, RHR torus cooling mode, and Unit 1 and Unit 2 RHRSW injection mode

### PROCEDURES

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